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The relative predictive validity of oxytocin and cortisol as biomarkers of psychological and physical wellbeing

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Abstract

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The relative predictive validity of oxytocin and cortisol as biomarkers of psychological
and physical wellbeing

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The roles of oxytocin and cortisol are increasingly being investigated in psychological health; however, few studies have simultaneously examined the relative strength and direction of relationships between oxytocin and cortisol and indices of psycho-logical and physiological health. Understanding the endogenous balance of oxytocin and cortisol and their individual links to physical and mental health may improve biopsychosocial mod-els and interventions. We hypothesised that cortisol would predict psychopathology, whereas oxytocin would predict social connect-edness, and that both would be related to quality of life. We quantified morning plasma cortisol and oxytocin concentrations (via ELISA), blood pressure, body mass index and heart rate in 60 healthy participants. Additionally, participants completed com-prehensive measures of psychopathology, cognitive distortions, quality of life, stress and social connectedness. Correlational and regression methods were employed to estimate the relationships between variables. Plasma oxytocin (mean = 277 ± 23 pg/mL) and cortisol (mean = 107 ± 8 ng/mL) both showed high inter-individual variability, although this was larger for oxytocin. Both oxytocin and cortisol were significantly correlated with several distinct psycho-metric measures and physical indices of health. Morning cortisol predicted stress levels and psychopathology, whereas oxytocin pre-dicted perceived social connectedness and was negatively related to depressive cognitive distortions. Cortisol appears to be a better biomarker for overall psychopathology, stress and physical health while the role of oxytocin in cognitive distortions warrants further investigation. This study is one of the first to report on comprehen-sive data that links oxytocin, cortisol, indices of physical health and self-reported psychological wellbeing, with relevance to biopsy-chosocial models of health and clinical practice